

**CLAIMS:**

1. A process for preparing aliphatic alcohols having  
from 7 to 17 carbon atoms by means of one or more  
5 reaction stages which each comprise the steps
  - a) cobalt-catalyzed hydroformylation of olefins  
having from 6 to 16 carbon atoms,
  - b) treatment of the hydroformylation mixture with  
oxygen-containing gases in the presence of  
10 acidic, aqueous cobalt(II) salt solutions,
  - c) separation of the mixture from b) into an  
aqueous phase comprising cobalt salts and an  
organic phase comprising the aliphatic  
aldehydes,
  - 15 d) hydrogenation of the aldehyde-containing  
organic phase,  
wherein
  - e) the organic phase from c) is extracted with a  
water-containing liquid.
- 20 2. The process as claimed in claim 1, comprising a  
further step
  - f) separation of all or part of the organic phase  
from b) by distillation into a low-boiling  
25 fraction comprising unreacted olefins and an  
aldehyde-containing bottom fraction,  
wherein, in step e), the organic phase from c)  
and/or the aldehyde-containing bottom fraction  
from f) is extracted with a water-containing  
30 liquid.
3. The process as claimed in claim 1 or 2, wherein  
the extraction (step e) is carried out using pure  
water.
- 35 4. The process as claimed in claim 1 or 2, wherein  
the extraction is carried out using an aqueous  
solution or a mixture of water with a mineral

acid, a carboxylic acid and/or an organic solvent.

5. The process as claimed in any of claims 1 to 4,  
wherein the pH of the water-containing liquid is  
less than or equal to 7.
6. The process as claimed in any of claims 1 to 5,  
wherein at least two reaction stages are carried  
out and all or part of the organic phase separated  
off in step c) is passed to step a) of the next  
reaction stage.
7. The process as claimed in any of claims 2 to 6,  
wherein all or part of the low-boiling fraction  
separated off in step f) is returned to step a).
8. The process as claimed in any of claims 2 to 6,  
wherein at least two reaction stages are carried  
out and the low-boiling fraction separated off in  
step f) is passed to step a) of the next reaction  
stage.
9. The process as claimed in any of claims 2 to 6,  
wherein at least two reaction stages are carried  
out and the low-boiling fraction separated off in  
step f) is passed to step a) of the next reaction  
stage and the bottom fractions separated off in  
step f) of all reaction stages are hydrogenated in  
a joint step d).
10. The process as claimed in any of claims 2 to 6,  
wherein two reaction stages are carried out and  
the low boilers separated off in step f) of the  
first reaction stage are passed to step a) of the  
second reaction stage and the organic phase from  
step b) of both stages is passed to step c) of the  
first reaction stage.

11. The process as claimed in any of claims 2 to 6,  
wherein two reaction stages are carried out and  
the low boilers separated off in step f) of the  
first reaction stage are passed to step a) of the  
5 second reaction stage and the steps b), c) and d)  
are each carried out jointly for the two reaction  
stages.